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EXAMINER
HIGHTER, TREVILLIAN H

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/812,198	MORFORD ET AL.
	Examiner	Art Unit	
	TREVILLIAN HIGHTER	4152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 March 2004</u>.
2a)☐ This action is FINAL.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
      closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-29</u> is/are pending in the application.
      4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-29</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
      Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
      Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
      a)☐ All b)☐ Some * c)☐ None of:
         1.☐ Certified copies of the priority documents have been received.
         2.☐ Certified copies of the priority documents have been received in Application No. _____.
         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
             application from the International Bureau (PCT Rule 17.2(a)).
      * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   Paper No(s)/Mail Date. _____.
3)☐ Information Disclosure Statement(s) (PTO/SB/08)   5)☐ Notice of Informal Patent Application
      Paper No(s)/Mail Date _____.   6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-29 are pending in this application.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

3.   **Claims 1, 11-13, and 26-29 are rejected under 35 U.S.C. 102(e) as being**

anticipated by Wiryaman et al. (Patent No. US 7,010,611 B1), hereinafter

Wiryaman.

4.   With respect to claim 1, Wiryaman discloses a network environment including a

computer network (Fig. 2) operable to provide differentiated services to data flows

(column 3, lines 39-43) based on tags or other identifiers associated with the packets in

the data flows (column 3, lines 39-43), wherein the differentiated services comprise a

first service level and a second service level (column 3, lines 44-46, type of service

(TOS) is interpreted as service level, if a type of service value is changed it is apparent

that more that there is more than one service level); a method comprising:

monitoring the performance of a network application (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67; column 5, lines 1-2; column 5, lines 21-29) involving the transfer of packets between a first set of hosts and a second set of hosts over the computer network (Fig. 2, column 2, lines 46-50); and

conditionally designating the packets for a selected service level (column 3, lines 38s-49, lines 38-39) supported by the computer network based on the monitored performance of the network application (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67; column 5, lines 1-2; column 5, lines 21-29).

5.   With respect to claim 13, Wiryaman discloses marking, by default, packets associated with a network application (column 3, lines 38-49, MPLS labels are a form of marking packets) for transfer over a first label-switched path of the computer network (column 3, lines 39-43); monitoring the performance of the network application (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67; column 5, lines 1-2; column 5, lines 21-29) involving the transfer of packets between a first set of hosts and a second set of hosts over the computer network (column 2, lines 38-45); and conditionally marking packets associated with the network application (column 3, lines 38-49) for transfer over a second label switched path (column 3, lines 39-43) in response to a degradation in performance of the network application (column 3, lines 46-49).

6.   With respect to claim 26, Wiryaman discloses a packet processor operative to detect data flows (column 1, lines 31-34; packets are detected prior to being classified into classes based on matching criteria, such as, IP address, port numbers, and protocol which characterize a data flow; when packets are detected and classified, data flows are detected and classified) in network traffic traversing a communications path (column 2, lines 42-45 and 46-50) the data flows each comprising at least one packet (column 2, lines 46-50, network packets are classified into classes based on matching criteria, such as, IP address, port numbers, and protocol which characterize a data flow) parse at least one packet associated with a data flow into a flow specification (column 3, lines 3-7 and 13-15, flow specification is interpreted an object to identify traffic classes associated with data flow, such as, protocol), a traffic classification database (Traffic classification database is interpreted as a hash table or filter database, column 3, lines 1-13) operative to store at least one traffic class (column 3, lines 1-4) including a traffic class identifier and at least one attribute defining the traffic class (column 3, lines 1-4); compare attributes stored in association with traffic class identifiers to attributes of a data flow to match a traffic class that corresponds to the data flow (column 3, lines 1-31); an application performance monitoring module (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67; column 5, lines 1-2; column 5, lines 21-29) operative to monitor the performance of at least one traffic class (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67; column 5, lines 1-2; column 5, lines 21-29) by maintaining at least one measurement parameter (column 4, lines 17-20; column 3, lines 53-55) characterizing the transfer of packets between a first set of hosts and a second set of hosts over the computer network (column 2, lines 38-45; Fig. 2);

and conditionally designating at least one monitored traffic class for a selected service level (column 3, lines 44-46 and 39-43) supported by the differentiated services network (column 3, lines 39-43) based on the monitored performance of the traffic class (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67; column 5, lines 1-2; column 5, lines 21-29); and a traffic policy module (column 3, lines 39-43) operative to mark data flows with the at least one traffic class for the selected service level (column 3, lines 39-43, MPLS labels are used for marking) across the differentiated services network designated by the application performance monitoring module (column 3, lines 39-43).

7.   With respect to claim 11, Wiryaman discloses monitoring usage of the service levels supported by the computer network (column 3, lines 46-52, lines 38-39, type of service (TOS) is interpreted as service level, monitoring usage of service levels is apparent when the user changes a value to match with an underlying application); and wherein the conditional selecting step is further conditioned on the monitored usage of a given service level not exceeding a predetermined threshold level (column 3, lines 46-49, underlying application may require the service level not to exceed a threshold).

8.   With respect to claim 12, Wiryaman discloses monitoring usage of the service levels supported by the computer network relative to a budget (column 3, lines 46-52, lines 38-39, type of service (TOS) is interpreted as service level, monitoring usage of service levels is apparent when the user changes a value to match with an underlying application, underlying application may be relative to a budget); and wherein the

conditional selecting step is further conditioned on the monitored usage not exceeding the budget (column 3, lines 46-52, lines 38-39, type of service (TOS) is interpreted as service level, monitoring usage of service levels is apparent when the user changes a value to match with an underlying application, underlying application may be relative to a budget).

9.   With respect to claim 27, Wiryaman discloses the traffic classification database is further operative to store a default service level in association with at least one traffic class (column 3, lines 1-31, corresponding data can include a default service level); wherein the traffic policy module (column 3, lines 1-31, corresponding data can include a default service level) is operative to mark data flows (column 3, lines 1-31, corresponding data can include a default service level) corresponding to a given traffic class with the corresponding service level in the traffic classification database (column 3, lines 1-31, corresponding data can include a default service level); and wherein the application performance monitoring module is operative to upgrade the service level applied to a traffic class (column 3, lines 38-52) by associating an upgraded service [eve[identifier to the traffic class in the traffic classification database (column 3, lines 38-52).

10.   With respect to claim 28, The apparatus of claim 26 wherein the packet processor is further operative to parse at least one packet associated with the flow into a flow specification (column 3, lines 3-7 and 13-15, flow specification is interpreted an object to identify traffic classes associated with data flow, such as, protocol), wherein

said flow specification contains at least one instance of any one of the following: a protocol family designation, a direction of packet flow designation, a protocol type designation, a pair of hosts, a pair of ports, a pointer to a MIME type a pointer to an application-specific attribute (column 3, lines 4-7).

11.   With respect to claim 29, Wiryaman discloses match the flow specification (flow specification interpretation as an object to identify traffic classes associated with data flow) to a plurality of traffic classes (column 3, lines 1-4), each of the traffic classes defined by one or more matching attributes; and thereupon,

having found a matching traffic class in the matching step (column 3, lines 25-31), associate said flow specification with a traffic class from the plurality of traffic classes (column 3, lines 25-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12.   **Claims 2-3 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiryaman as applied to claims 1 and 13 above, in view of Chen et al. (Patent No. US 5,793,976), hereinafter, Chen.**

13.   With respect to claims 2 and 17, Wiryaman does not disclose the monitoring step comprises monitoring the response times between at least one host in the first set and at least one host in the second set.

Chen, however, discloses the monitoring step comprises monitoring the response times between at least one host in the first set and at least one host in the second set (column 1, lines 7-9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Chen, in order to provide accurate instantaneous monitoring of the performance of a network connection.

14.   With respect claims 3 and 18, Wiryaman does not disclose recording, at a network device disposed between a first set of hosts and a second set of hosts, the arrival time of the packets associated with the network application; computing, based on the recorded packet arrival times, one or more parameters characterizing the response time between at least one host in the first set and at least one host in the second set.

Chen, however, discloses recording, at a network device disposed between a first set of hosts and a second set of hosts (column 8, lines 34-38), the arrival time of the packets associated with the network application (column 7, lines 65-67; column 8, lines 1-6); computing, based on the recorded packet arrival times (column 7, lines 65-67; column 8, line 1), one or more parameters characterizing the response time (column 7, lines 65-67; column 8, line 1, packet delay is a characterization of response time)

between at least one host in the first set and at least one host in the second set (column 1, lines 7-9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Chen, in order to provide accurate instantaneous monitoring of the performance of a network connection.

15.   Claims 4-8, 10, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiryaman as applied to claims 1 and 13 above, in view of Walrand et al. (Patent No. US 6,674,760 B1), hereinafter, Walrand.

16.   With respect to claim 4, Wiryaman does not disclose designating the packets comprises marking the packets with a predetermined differentiated service policy.

Walrand, however, discloses designating the packets comprises marking the packets with a predetermined differentiated service policy (column 3, lines 28-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

17.   With respect to claim 5, Wiryaman does not disclose designating the packets comprises adding labels to the packets.

Walrand, however, discloses designating the packets comprises adding labels to the packets (column 3, lines 38-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

18.   With respect to claim 6, Wiryaman does not disclose the computer network is an MPLS network, and wherein the labels are MPLS tags.

Walrand, however, discloses the computer network is an MPLS network, and wherein the labels are MPLS tags (column 3, lines 38-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

19.   With respect to claim 7, Wiryaman does not disclose designating the packets comprises adding tags to the packets.

Walrand, however, discloses designating the packets comprises adding tags to the packets (column 3, lines 28-37, DiffServ bits is interpreted as diffserv tags).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

20.   With respect to claim 8, Wiryaman does not disclose the computer network is a diffserv network, and wherein the tags are diffserv tags.

Walrand, however, discloses the computer network is a diffserv network (column 3, lines 28-37), and wherein the tags are diffserv tags (column 3, lines 28-37, DiffServ bits are interpreted as diffserv tags).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

21.   With respect to claim 10 Wiryaman does not disclose the monitoring step comprises measuring the network delay attributable to the differentiated services computer network.

Walrand, however, discloses disclose the monitoring step comprises measuring the network delay (column 3, lines 56-58) attributable to the differentiated services computer network (column 2, lines 2-5, DiffServ is a differentiated service).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

22.   With respect to claim 19, Wiryaman does not disclose the computer network is an MPLS network, and wherein the marking step comprises applying MPLS tags designating selected label- switched paths.

Walrand, however, discloses the computer network is an MPLS network (column 3, lines 38-44), and wherein the marking step comprises applying MPLS tags designating selected label- switched paths (column 3, lines 38-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

23.   With respect to claim 21, Wiryaman does not disclose the monitoring step comprises measuring the network delay attributable to the differentiated services computer network.

Walrand, however, discloses the monitoring step comprises measuring the network delay (column 3, lines 56-58) attributable to the differentiated services computer network (column 2, lines 2-5, DiffServ is a differentiated service).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

24.   Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiryaman as applied to claims 1 and 13 above, in view of Packer (Patent No. US 5,802,106), hereinafter, Packer.

25.   With respect to claims 9 and 20, Wiryaman does not disclose monitoring the performance of selected traffic classes comprises monitoring the packet exchange (PET) time observed over the computer network.

Packer, however, discloses monitoring the performance of selected traffic classes comprises monitoring the packet exchange (PET) time observed over the computer network (column 2, lines 63-67; column 3, lines 1-9)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Packer, in order to improve network routing speeds.

26.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiryaman as applied to claim 13 above, in view of Le Gouriellec et al. (Patent No. US 7,133,360 B2), hereinafter Le Gouriellec.

27.   With respect to claim 16, Wiryaman discloses monitoring the performance, relative to at least one network application (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67; column 5, lines 1-2; column 5, lines 21-29), of the first label-switched path of the computer network (column 3, lines 39-43);

Wiryaman does not disclose resuming the marking of packets associated with the network application for transfer over the first label-switched path when the performance of the first label-switched path crosses a threshold level.

Le Gouriellec, however, discloses resuming the marking of packets associated with the network application for transfer over the first label-switched path when the performance of the first label-switched path crosses a threshold level (Abstract, lines 2-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Le Gouriellec, in order to control network congestion.

28.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiryaman, in view of Tinsley (Patent No. US 6,965,592 B2), hereinafter Tinsley.

29.   With respect to claim 14, Wiryaman does not disclose the first label-switched path is a least cost path.

Tinsley, however, the first label-switched path is a least cost path (column 11, lines 61-64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman with the teachings of Tinsley, in order to reduce expense due to processing requirements, high-traffic volume and possible network outage of nodes.

30.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiryaman, in view of Tinsley as applied to claim 14 above, and further in view of Walrand et al. (Patent No. US 6,674,760 B1), hereinafter, Walrand.

31.   With the respect to claim 15, Wiryaman and Tinsley do not disclose the second label-switched path provides a guaranteed minimum quality of service.

Walrand, however, discloses the second label-switched path provides a

guaranteed minimum quality of service (column 1, lines 49-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wiryaman and Tinsley with the teachings of Walrand, in order to improve network routing speeds.

32.   Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Gouriellec, in view of Wiryaman.

33.   With respect to claim 22, Le Gouriellec discloses classifying data flows (column 1, lines 31-34; column 3, lines 1-17; packets are classified into classes based on matching criteria, such as, IP address, port numbers, and protocol which characterize data flow; when packets are classified, data flows are classified) transmitted between the first set of hosts and the second set of hosts (column 2, lines 38-45; Fig. 2) into one or more traffic classes (column 1, lines 31-33); designating the data flow (column 3, lines 38-52, designating the data flow is interpreted as marking the data flow; packets characterize data flows; MPLS labels are for marking IP packets) for a default service level supported by the computer network (column 3, lines 44-52, lines 38-39) based on the identified traffic class (column 3, lines 44-46);

Le Gouriellec does not disclose monitoring the performance of selected traffic classes; and upgrading the service class applied to a first traffic class in the selected traffic classes upon detection of degradation in performance of the first traffic class.

Wiryaman, however, discloses monitoring the performance of selected traffic classes (Fig. 4, column 3, lines 44-49; column 4, lines 8-16; column 4, lines 66-67;

column 5, lines 1-2; column 5, lines 21-29); and upgrading the service class applied to a first traffic class in the selected traffic classes (column 3, lines 44-49) upon detection of a degradation in performance of the first traffic class (column 3, lines 50-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Le Gouriellec with the teachings of Wiryaman, in order to improve network routing speeds.

34.   With respect to claim 23, Le Gouriellec discloses monitoring the performance of the default service level supported by the computer network (column 4, lines 7-10; column 3, lines 57-60, lines 62-65; CR and ER are configured in a service level agreement, therefore monitoring the performance of CR and ER is equivalent to monitoring the performance of the service level); and resuming the marking of packets associated with the network application for transfer over the default service level when the performance of the default service level crosses a threshold level (column 4, lines 11-19).

35.   Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Gouriellec, in view of Wiryaman, and further in view of Packer.

36.   With respect to claim 24, Le Gouriellec and Wiryaman does not disclose monitoring the performance of selected traffic classes comprises monitoring the packet exchange (PET) time observed over the computer network.

Packer, however, discloses monitoring the performance of selected traffic classes comprises monitoring the packet exchange (PET) time observed over the computer network (column 2, lines 63-67; column 3, lines 1-9)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Le Gouriellec and Wiryaman with the teachings of Packer, in order to improve network routing speeds.

37.   Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Gouriellec, in view of Wiryaman, and further in view of Walrand.

38.   With respect to claim 25, Le Gouriellec and Wiryaman do not disclose the monitoring step comprises measuring the network delay attributable to the differentiated services computer network.

Walrand, however, discloses disclose the monitoring step comprises measuring the network delay (column 3, lines 56-58) attributable to the differentiated services computer network (column 2, lines 2-5, DiffServ is a differentiated service).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Le Gouriellec and Wiryaman with the teachings of Walrand, in order to improve network routing speeds.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TREVILLIAN HIGHTER whose telephone number is (571)270-3806. The examiner can normally be reached on Monday-Friday 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on (571)272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

THH 3/24/2008

/Nabil El-Hady, Ph.D, M.B.A./
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